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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/459,380	12/13/1999	PETER ALLEN HUBOI	03384.0346-0	1069

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EXAMINER

STORM, DONALD L

ART UNIT	PAPER NUMBER
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2654

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7

Please find below and/or attached an Office communication concerning this application or proceeding.

32

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/459,380	HUBOI, PETER ALLEN
	Examiner Donald L. Storm	Art Unit 2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 25 February 2003 .

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-54 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-54 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.  
15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .

4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Informalities*

2. Claim 10, and by dependency claims 11-16, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “storing one or voice representations” (line 3) needs clarification. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phrase to be -- storing one or more voice representations--.
3. Claim 10, and by dependency claims 11-16, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “the voice message” needs clarification. Because no voice message was previously recited, it is unclear as to what element this phrase is making reference. To further timely prosecution and evaluate prior art, the Examiner has interpreted the voice message to be the received voice information.
4. Claim 23, and by dependency claims 24-29 are objected to under 37 CFR 1.75(a) because the meaning of the phrase “the voice message” needs clarification. Because no voice message was previously recited, it is unclear as to what element this phrase is making reference. To further timely prosecution and evaluate prior art, the Examiner has interpreted the voice message to be the received voice information.
5. Claim 37, and by dependency claims 38-40 are objected to under 37 CFR 1.75(a) because the meaning of the phrase “the voice message” needs clarification at least for its first appearance.

Because no voice message was previously recited, it is unclear as to what element this phrase is making reference. To further timely prosecution and evaluate prior art, the Examiner has interpreted the voice message to be the received voice information.

6. Claim 44, and by dependency claims 45-46, are objected to for the same reasons as claim 37 because the limitations are recited using obviously similar phrases.

7. Claim 48 is objected to for the same reasons as claim 23 because the limitations are recited using obviously similar phrases.

8. Claim 50 is objected to for the same reasons as claim 37 because the limitations are recited using obviously similar phrases.

9. Claim 52 is objected to for the same reasons as claim 37 because the limitations are recited using obviously similar phrases.

10. Claim 54 is objected to for the same reasons as claim 37 because the limitations are recited using obviously similar phrases.

11. The Examiner notes, without objection, the possibility of informalities in the claims. The Applicant may wish to consider changes during normal review and revision of the disclosure.

In claim 14, line 2, should the word "ore" be --or--?

***Claim Rejections - 35 USC § 102***

**McDonough**

12. Claims 1, 4-5, 8-10, 13-17, 22-23, 28-29, 47, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by McDonough et al. [US Patent 5,625,748], already of record.

13. Regarding claim 1, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech by describing the claim elements using the same rationale as in the prior Office action (paper 3) at numbered section 7, and also describing:

each voice representation corresponds is associated with a score [at column 6, lines 41-42, as parameter values for individual event distributions];

generate a total score associated with the voice message [at column 7, lines 28-44, as summing confidence scores over the speech data];

performing the (stored) action based on the total score [at column 12, lines 28-41, as sort, classify or route based on the topic, wherein at column 5, line 64-column 6, line 1 the topic choice is a confidence score that a topic is present].

14. Regarding claim 10, McDonough describes the claimed limitations using the same rationale as in the prior Office action (paper 3) at numbered section 12, also describing additional limitations similar to additional limitations set forth in amended claim 1. McDonough describes the additional limitations as indicated there.

15. Claim 15 is set forth including the limitations of claim 10. McDonough describes those limitations as indicated there. McDonough also describes additional limitations as follows:

receiving voice information during a call [at column 12, lines 37-38, as spoken message by a phone call from a caller];

compiling statistics on the call [at column 7, lines 46-47, as compute the scoring statistic given the data in the message].

16. Regarding claims 17 and 22, McDonough describes the claimed limitations using the same rationale as in the prior Office action (paper 3) at numbered section 17, also describing additional limitations similar to additional limitations set forth in amended claim 1. McDonough describes the additional limitations as indicated there.

17. Regarding claims 23, 28, and 29, McDonough describes the claimed limitations using the same rationale as in the prior Office action (paper 3) at numbered section 17, also describing additional limitations similar to additional limitations set forth in amended claims 1 and 15. McDonough describes the additional limitations as indicated there.

18. Claims 4-5, 8-9, 13-14, 16, 47, and 48 are rejected using the same rationale as in the prior Office action (paper 3).

***Claim Rejections - 35 USC § 103***

**McDonough and Furui**

19. Claims 2, 11, 18, 24, 30, 32, 35-37, 39-41, 43-46, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289, both already of record.

20. Claims 2, 11, 18, and 24 are rejected using the same rationale as in the prior Office action (paper 3).

21. Regarding claim 30, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech comprising:

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive a voice message [at column 1, lines 53-54, as provide an input speech message];

speech [at column 6, lines 23-29, as untranscribed speech data];

predetermined patterns of speech [at column 7, lines 27-37, as HMMs from training and modeling];

analyze the voice message to determine if it exhibits a predetermined pattern of speech [at column 5, lines 43-50, as process a spoken message to produce a signal for the potential speech events in the spoken data];

perform actions if the predetermined pattern is found in the voice message [at column 2, lines 1-8, as route the message according to the action associated with the word].

Although, McDonough [at column 7, lines 27-44] describes spotting the words and phrases of the speech data using phonetically trained HMMs for the preferred embodiments, McDonough presents using HMMs for this method as known techniques. Consequently, McDonough does describe details of the techniques. In particular, McDonough does not explicitly describe HMMs representing either a tone of speech or a frequency of speech.

Furui [at page 255, lines 29-38 & page 258, lines 16-18] describes widely investigated word modeling by phonetic HMMS and that feature vectors are applied in HMMs. Furui describes:

the predetermined pattern representing a tone of speech in the voice message [at page 8, lines 1-15 and Fig. 8.15, as a lattice taking account of allophones, coarticulation, stress, and syllables];

the predetermined pattern representing a frequency of the speech in the voice message [at page 278, lines 3-9, as Markov models for recognition of input speech converted into spectral feature vectors by DFT].

To the extent that McDonough's stored voice representations of phonemes, words, and phrases do not innately represent frequency (or tone), it would have been obvious to one of ordinary skill in the art of speech recognition at the time of invention that Furui's DFT produces frequency spectral parameters to represent the HMMs suitable for implementing McDonough's HMMs for word and phrase spotting, because McDonough points out HMMs as preferred.

22. Claim 32 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 5. McDonough and Furui describe and make obvious the limitations as indicated there.
23. Claim 35 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 8. McDonough and Furui describe and make obvious the limitations as indicated there.
24. Claim 36 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 9. McDonough and Furui describe and make obvious the limitations as indicated there.
25. Regarding claims 37 and claims 39-40, McDonough and Furui describe and make obvious claimed limitations using the same rationale as in the prior Office action (paper 3) at numbered section 20, also describing and making obvious additional limitations similar to additional limitations set forth in amended claim 30 as indicated there.
26. Regarding claim 41 and claim 43, McDonough and Furui describe and make obvious claimed limitations using the same rationale as in the prior Office action (paper 3) at numbered section 21, also describing and making obvious additional limitations similar to additional limitations set forth in amended claim 30 as indicated there.

27. Regarding claim 44 and claim 46, McDonough and Furui describe and make obvious claimed limitations using the same rationale as in the prior Office action (paper 3) at numbered section 22, also describing and making obvious additional limitations similar to additional limitations set forth in amended claim 30 as indicated there.

28. Claim 49 is set forth with limitations similar to limitations set forth in claims 30 and 47. McDonough and Furui describe and make obvious the limitations as indicated there.

29. Claim 50 is set forth with limitations similar to limitations set forth in claims 37 and 48. McDonough and Furui describe and make obvious the limitations as indicated there.

**McDonough and Epstein**

30. Claims 6-7, 20-21, 26-27, and 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Epstein et al. [US Patent 6,327,343], both already of record.

31. Claims 6, 7, 20, 21, 26, 27, 51, and 52 are rejected using the same rationale as in the prior Office action (paper 3).

**McDonough and Furui and Epstein**

32. Claims 3, 12, 19, 25, 31, 33-34, 38, 42, 45, and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Sadaoki Furui,

“Digital Speech Processing, Synthesis, and Recognition,” Marcel Dekker, Inc., New York, 1989, pp. 225-289 and further in view of Epstein et al. [US Patent 6,327,343], all already of record.

33. Claims 3, 12, 19, 25, 31, and 38 are rejected using the same rationale as in the prior Office action (paper 3).

34. Claims 33 and 34 are set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claims 6 and 7. Neither McDonough nor Furui explicitly describes the additional limitations of claims 6 and 7; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

35. Claim 42 is set forth including the limitations of claim 41 and with additional limitations similar to limitations set forth in claim 21. Neither McDonough nor Furui explicitly describes the additional limitations of claim 21; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

36. Claim 45 is set forth including the limitations of claim 44 and with additional limitations similar to limitations set forth in claim 27. Neither McDonough nor Furui explicitly describes the additional limitations of claim 27; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

37. Claim 53 is set forth with limitations similar to limitations set forth in claim 30 and with additional limitations similar to limitations set forth in claim 51. Neither McDonough nor Furui

explicitly describes the additional limitations of claim 51; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

38. Claim 54 is set forth with limitations similar to limitations set forth in claim 37 and with additional limitations similar to limitations set forth in claim 51. Neither McDonough nor Furui explicitly describes the additional limitations of claim 51; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

***Response to Arguments***

39. The prior Office action, mailed November 20, 2002 (paper 3), objects to the claims and rejects claims under 35 USC § 102 and § 103. The Applicant's arguments and changes in AMENDMENT AND RESPONSE TO OFFICE ACTION, filed February 25, 2003 (paper 4) have been fully considered with the following results.

40. With respect to objection to those claims needing clarification, the changes entered by amendment provide clear descriptions of the claimed subject matter. Accordingly, the objections are removed.

41. With respect to rejection of independent claims 1, 10, 17, 23, 47, and 48 under 35 USC § 102, citing McDonough, the Applicant's arguments appear to be as follows:

a. The Applicant's argument appears to be that McDonough's classification into topics is the end of McDonough's interest in the communication. In particular, classification as to topic is not performance of an action and no other action is taken. This argument is not persuasive

because McDonough [at column 2, lines 1-5] describes performing the actions at various nodes of a neural network corresponding to identified words, for example routing. McDonough [at column 12, lines 28-42] describes sorting, indexing, and routing based on the identified topic.

b. The Applicant's argument appears to be that McDonough does not describe scores associated with the voice representations, a total score associated with the message, and performing actions based on the total score. This argument is not persuasive because McDonough [at column 6, lines 41-42] describes scores associated with the speech events. One way in which McDonough [at column 7, lines 26-44] scores the message is by summing confidence scores of occurrences of words and phrases. The way in which McDonough [at column 12, lines 28-42] bases taking an action on the score of the message is by determining the topic that the score indicates for the message.

The Applicant's arguments have been fully considered but they are not persuasive. Accordingly, the rejections are maintained.

42. With respect to rejection of independent claims 30, 37, 41, 44, 49, 50, and 53-54 under 35 USC § 102 and § 103, citing McDonough alone and in combination with Epstein, the changes entered by amendment include the predetermined pattern representing tone of speech and/or frequency of speech.

The references McDonough and Epstein do not describe or make obvious that limitation. Accordingly, the rejections are removed. The Applicant's assertions with respect to McDonough have been considered, but they are moot in view of the new claim element. Please see new grounds of rejection applied to address the new claim element: the predetermined pattern representing tone of speech and/or frequency of speech.

***Conclusion***

43. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

44. Any response to this action should be mailed to:

**Box AF**

Commissioner of Patents and Trademarks  
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**or faxed to:**

(703) 872-9314, (for formal communications; please mark "EXPEDITED PROCEDURE")

**Or:**

(703) 872-9314, (for informal or draft communications, and please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

45. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Art Unit 2654, whose telephone number is (703)305-3941. The examiner can normally be reached on weekdays between 8:00 AM and 4:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (703)305-4379. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office at telephone number (703)306-0377.

*Marsha D. Banks-Harold*

MARSHA D. BANKS-HAROLD  
SUPERVISORY PATENT EXAMINER  
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*Donald L. Storm*

Donald L. Storm  
March 13, 2003